

## SEQUENCE LISTING

<110> Gaiger, Alexander  
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<120> COMPOSITIONS AND METHODS FOR WT1  
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Lys Thr Cys Gln Arg Lys Phe Ser Arg  
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Lys Thr Ser Glu Lys Pro Phe Ser Cys  
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&lt;400&gt; 227

Thr Pro Ile Leu Cys Gly Ala Gln Tyr  
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&lt;400&gt; 228

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Thr Pro Tyr Ser Ser Asp Asn Leu Tyr  
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&lt;400&gt; 239

Val	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys
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&lt;400&gt; 240

Val	Lys	Trp	Thr	Glu	Gly	Gln	Ser	Asn
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&lt;211&gt; 9

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&lt;400&gt; 241

Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala
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&lt;211&gt; 9

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&lt;400&gt; 242

Val	Pro	Gly	Val	Ala	Pro	Thr	Leu	Val
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&lt;211&gt; 9

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&lt;400&gt; 243

Val	Arg	His	His	Asn	Met	His	Gln	Arg
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&lt;211&gt; 9

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&lt;213&gt; Homo sapien

&lt;400&gt; 251

Tyr Gln Met Thr Ser Gln Leu Glu Cys  
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&lt;210&gt; 252

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 252

Tyr Arg Ile His Thr His Gly Val Phe  
 1 5

&lt;210&gt; 253

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 253

Tyr Ser Ser Asp Asn Leu Tyr Gln Met  
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&lt;210&gt; 254

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 254

Ala Glu Pro His Glu Glu Gln Cys Leu  
 1 5

&lt;210&gt; 255

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 255

Ala Leu Leu Pro Ala Val Ser Ser Leu  
 1 5

&lt;210&gt; 256

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

<400> 256  
Ala Tyr Gly Ser Leu Gly Gly Pro Ala  
1 5

<210> 257  
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<212> PRT  
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<400> 257  
Ala Tyr Pro Gly Cys Asn Lys Arg Tyr  
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<210> 258  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 258  
Cys Met Thr Trp Asn Gln Met Asn Leu  
1 5

<210> 259  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 259  
Cys Thr Gly Ser Gln Ala Leu Leu Leu  
1 5

<210> 260  
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<213> Mus musculus

<400> 260  
Asp Gly Ala Pro Ser Tyr Gly His Thr  
1 5

<210> 261  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 261  
Asp Leu Asn Ala Leu Leu Pro Ala Val  
1 5

<210> 262  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 262  
 Asp Pro Met Gly Gln Gln Gly Ser Leu  
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<210> 263  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 263  
 Asp Ser Cys Thr Gly Ser Gln Ala Leu  
 1 5

<210> 264  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 264  
 Asp Val Arg Asp Leu Asn Ala Leu Leu  
 1 5

<210> 265  
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 <212> PRT  
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<400> 265  
 Glu Gln Cys Leu Ser Ala Phe Thr Leu  
 1 5

<210> 266  
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 <212> PRT  
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<400> 266  
 Glu Ser Asp Asn His Thr Ala Pro Ile  
 1 5

<210> 267  
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 <212> PRT  
 <213> Mus musculus

<400> 267  
 Phe Pro Asn Ala Pro Tyr Leu Pro Ser  
 1 5

<210> 268  
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 <212> PRT  
 <213> Mus musculus

&lt;400&gt; 268

Gly Cys Asn Lys Arg Tyr Phe Lys Leu  
1 5

&lt;210&gt; 269

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 269

Gly Gln Ala Arg Met Phe Pro Asn Ala  
1 5

&lt;210&gt; 270

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 270

Gly Val Phe Arg Gly Ile Gln Asp Val  
1 5

&lt;210&gt; 271

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 271

Gly Tyr Glu Ser Asp Asn His Thr Ala  
1 5

&lt;210&gt; 272

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 272

His Ser Phe Lys His Glu Asp Pro Met  
1 5

&lt;210&gt; 273

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 273

His Thr His Gly Val Phe Arg Gly Ile  
1 5

&lt;210&gt; 274

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

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 Ile Leu Cys Gly Ala Gln Tyr Arg Ile  
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<400> 275  
 Lys Phe Ala Arg Ser Asp Glu Leu Val  
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<210> 276  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 276  
 Lys Arg Tyr Phe Lys Leu Ser His Leu  
 1 5

<210> 277  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 277  
 Lys Thr Ser Glu Lys Pro Phe Ser Cys  
 1 5

<210> 278  
 <211> 9  
 <212> PRT  
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<400> 278  
 Leu Glu Cys Met Thr Trp Asn Gln Met  
 1 5

<210> 279  
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 <212> PRT  
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<400> 279  
 Leu Gly Gly Gly Gly Gly Cys Gly Leu  
 1 5

<210> 280  
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 <212> PRT  
 <213> Mus musculus

<400> 280  
 Leu Gln Met His Ser Arg Lys His Thr  
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<210> 281  
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 <212> PRT  
 <213> Mus musculus

<400> 281  
 Met His Gln Arg Asn Met Thr Lys Leu  
 1 5

<210> 282  
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 <212> PRT  
 <213> Mus musculus

<400> 282  
 Asn Ala Pro Tyr Leu Pro Ser Cys Leu  
 1 5

<210> 283  
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 <212> PRT  
 <213> Mus musculus

<400> 283  
 Asn Leu Gly Ala Thr Leu Lys Gly Met  
 1 5

<210> 284  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 284  
 Asn Leu Tyr Gln Met Thr Ser Gln Leu  
 1 5

<210> 285  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 285  
 Asn Met Thr Lys Leu His Val Ala Leu  
 1 5

<210> 286  
 <211> 9  
 <212> PRT  
 <213> Mus musculus



&lt;400&gt; 286

Asn Gln Met Asn Leu Gly Ala Thr Leu  
 1 5

&lt;210&gt; 287

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 287

Pro Gly Ala Ser Ala Tyr Gly Ser Leu  
 1 5

&lt;210&gt; 288

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 288

Gln Ala Ser Ser Gly Gln Ala Arg Met  
 1 5

&lt;210&gt; 289

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 289

Gln Met Thr Ser Gln Leu Glu Cys Met  
 1 5

&lt;210&gt; 290

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 290

Gln Gln Tyr Ser Val Pro Pro Pro Val  
 1 5

&lt;210&gt; 291

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 291

Gln Tyr Arg Ile His Thr His Gly Val  
 1 5

&lt;210&gt; 292

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

<400> 292

<211> 9

<213> Mus musculus

<400> 293

<211> 9

<213> Mus musculus

<400> 294

<211> 9

<213> Mus musculus

<400> 295

<211> 9

<213> Mus musculus

<400> 296

<211> 9

<213> Mus musculus

<400> 297

<211> 9

<213> Mus musculus

<400> 298  
 Ser Asp Val Arg Asp Leu Asn Ala Leu  
 1 5

<210> 299  
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<400> 299  
 Ser Leu Gly Glu Gln Gln Tyr Ser Val  
 1 5

<210> 300  
 <211> 9  
 <212> PRT  
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<400> 300  
 Thr Cys Gln Arg Lys Phe Ser Arg Ser  
 1 5

<210> 301  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 301  
 Thr Glu Gly Gln Ser Asn His Gly Ile  
 1 5

<210> 302  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 302  
 Thr Leu His Phe Ser Gly Gln Phe Thr  
 1 5

<210> 303  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 303  
 Thr Leu Val Arg Ser Ala Ser Glu Thr  
 1 5

<210> 304  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 304  
Val Leu Asp Phe Ala Pro Pro Gly Ala  
1 5

<210> 305  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 305  
Trp Asn Gln Met Asn Leu Gly Ala Thr  
1 5

<210> 306  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 306  
Tyr Phe Lys Leu Ser His Leu Gln Met  
1 5

<210> 307  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 307  
Tyr Gln Met Thr Ser Gln Leu Glu Cys  
1 5

<210> 308  
<211> 9  
<212> PRT  
<213> Mus musculus

<400> 308  
Tyr Ser Ser Asp Asn Leu Tyr Gln Met  
1 5

<210> 309  
<211> 6  
<212> PRT  
<213> Homo sapien

<400> 309  
Gly Ala Ala Gln Trp Ala  
1 5

<210> 310  
<211> 12  
<212> PRT  
<213> Homo sapien

<400> 310  
 Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro  
 1 5 10

<210> 311  
 <211> 15  
 <212> PRT  
 <213> Homo sapien

<400> 311  
 Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly  
 1 5 10 15

<210> 312  
 <211> 5  
 <212> PRT  
 <213> Homo sapien

<400> 312  
 His Ala Ala Gln Phe  
 1 5

<210> 313  
 <211> 32  
 <212> PRT  
 <213> Homo sapien

<400> 313  
 Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu  
 1 5 10 15  
 Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu  
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<210> 314  
 <211> 32  
 <212> PRT  
 <213> Homo sapien

<400> 314  
 Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg  
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 Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser  
 20 25 30

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 <212> PRT  
 <213> Homo sapien

<400> 315  
 Arg Tyr Phe Lys  
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<210> 316  
 <211> 14  
 <212> PRT  
 <213> Homo sapien

<400> 316  
 Glu Arg Arg Phe Ser Arg Ser Asp Gln Leu Lys Arg His Gln  
 1 5 10

<210> 317  
 <211> 22  
 <212> PRT  
 <213> Homo sapien

<400> 317  
 Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr  
 1 5 10 15  
 His Thr Gly Lys Thr Ser  
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<210> 318  
 <211> 21  
 <212> PRT  
 <213> Homo sapien

<400> 318  
 Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn  
 1 5 10 15  
 Met His Gln Arg Asn  
 20

<210> 319  
 <211> 449  
 <212> PRT  
 <213> Homo sapien

<400> 319  
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro  
 1 5 10 15  
 Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala  
 20 25 30  
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr  
 35 40 45  
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro  
 50 55 60  
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly  
 65 70 75 80  
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe  
 85 90 95  
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe  
 100 105 110  
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe  
 115 120 125  
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile

130 135 140  
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr  
 145 150 155 160  
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe  
 165 170 175  
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln  
 180 185 190  
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser  
 195 200 205  
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp  
 210 215 220  
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln  
 225 230 235 240  
 Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser  
 245 250 255  
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu  
 260 265 270  
 Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile  
 275 280 285  
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro  
 290 295 300  
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys  
 305 310 315 320  
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys  
 325 330 335  
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro  
 340 345 350  
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp  
 355 360 365  
 Gln Leu Lys Arg His Gln Arg His Thr Gly Val Lys Pro Phe Gln  
 370 375 380  
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr  
 385 390 395 400  
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys  
 405 410 415  
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val  
 420 425 430  
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala  
 435 440 445  
 Leu

&lt;210&gt; 320

&lt;211&gt; 449

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 320

Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Ser  
 1 5 10 15  
 Ser Leu Gly Gly Gly Gly Gly Cys Gly Leu Pro Val Ser Gly Ala Ala  
 20 25 30  
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr  
 35 40 45

Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro  
 50 55 60  
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly  
 65 70 75 80  
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Leu His Phe  
 85 90 95  
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe  
 100 105 110  
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe  
 115 120 125  
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Thr Ile  
 130 135 140  
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Ala Pro Ser Tyr  
 145 150 155 160  
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe  
 165 170 175  
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln  
 180 185 190  
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser  
 195 200 205  
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp  
 210 215 220  
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln  
 225 230 235 240  
 Met Asn Leu Gly Ala Thr Leu Lys Gly Met Ala Ala Gly Ser Ser Ser  
 245 250 255  
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Gly Ile Gly Tyr Glu  
 260 265 270  
 Ser Asp Asn His Thr Ala Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile  
 275 280 285  
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Ser  
 290 295 300  
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys  
 305 310 315 320  
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys  
 325 330 335  
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro  
 340 345 350  
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp  
 355 360 365  
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln  
 370 375 380  
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr  
 385 390 395 400  
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys  
 405 410 415  
 Arg Trp His Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val  
 420 425 430  
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu His Val Ala  
 435 440 445  
 Leu



<211> 9  
 <212> PRT  
 <213> Homo sapien and Mus musculus

<400> 321  
 Pro Ser Gln Ala Ser Ser Gly Gln Ala  
 1 5

<210> 322  
 <211> 9  
 <212> PRT  
 <213> Homo sapien and Mus musculus

<400> 322  
 Ser Ser Gly Gln Ala Arg Met Phe Pro  
 1 5

<210> 323  
 <211> 9  
 <212> PRT  
 <213> Homo sapien and Mus musculus

<400> 323  
 Gln Ala Arg Met Phe Pro Asn Ala Pro  
 1 5

<210> 324  
 <211> 9  
 <212> PRT  
 <213> Homo sapien and Mus musculus

<400> 324  
 Met Phe Pro Asn Ala Pro Tyr Leu Pro  
 1 5

<210> 325  
 <211> 9  
 <212> PRT  
 <213> Homo sapien and Mus musculus

<400> 325  
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys  
 1 5

<210> 326  
 <211> 9  
 <212> PRT  
 <213> Homo sapien and Mus musculus

<400> 326  
 Ala Pro Tyr Leu Pro Ser Cys Leu Glu  
 1 5

<210> 327  
 <211> 1029  
 <212> DNA  
 <213> Homo sapiens

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 aaactgaccg ttgcaaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240  
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 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420  
 ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480  
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 caatacagaa tacacacgca cgggtgtcttc agaggcattc aggatgtgag acgtgtgcct 600  
 ggagtagccc cgactcttgt acggtcggca tctgagacca gtgagaaacg ccccttcatg 660  
 tgtgcttacc caggctgcaa taagagatat tttaagctgt ccacttaca gatgcacagc 720  
 aggaagcaca ctggtgagaa accataccag tgtgacttca aggactgtga acgaaggttt 780  
 tttcgttcag accagctcaa aagacaccaa aggagacata caggtgtgaa accattccag 840  
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 catacagggtg aaaagccctt cagctgtcgg tggccaagtt gtcagaaaaa gtttgcccgg 960  
 tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaa actccagctg 1020  
 gcgctttga 1029

<210> 328  
 <211> 1233  
 <212> DNA  
 <213> Homo sapiens

<400> 328  
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 tgcgggtccgt gcaaaaatgat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180  
 aaactgaccg ttgcaaaaact gaacatcgat caaaaccctg gcactgcgcc gaaatatggc 240  
 atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagtg 300  
 ggtgcactgt ctaaagggtca gttgaaagag ttctctgacg ctaacctggc cggttctggt 360  
 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420  
 ggtggcagcg gtctggttcc gcgtggtagc tctggttcgg gggacgacga cgacaaatct 480  
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 ggtggtggtg gttgcgcaact gccggttagc ggtgcagcac agtgggctcc ggttctggac 600  
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 ccgccgccgc cgcgccgcc cccgccgcac tccttcatca aacaggaacc gagctgggg 720  
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 agccagcccg ctattcgcaa tcagggttac agcacgggta ccttcgacgg gacgcccagc 960  
 tacggtcaca gccctcgca ccatgcggcg cagttcccca accactcatt caagcatgag 1020  
 gatcccattg gccagcagg ctcgctgggt gagcagcagt actcgggtgcc gccccgggtc 1080  
 tatggctgcc acacccccac cgacagctgc accggcagcc aggttttgc gctgaggacg 1140  
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 cagatgaact taggagccac cttaaagggc tga 1233

<210> 329

<211> 1776  
 <212> DNA  
 <213> Homo sapiens

<400> 329  
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 atccgtggta tcccgaactc gctgctgttc aaaaacggtg aagtggcggc aaccaaagtg 300  
 ggtgcaactg cttaaaggta gttgaaagag ttccctcgacg ctaacctggc cggttctggt 360  
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 gacttcgcac cgcggggtgc atccgcatac ggttccctgg gtggtccggc accgcccggc 660  
 gcaccgccgc cgcgcgcgcg gccgcgcgcg caactccttc tcaaacagga accgagctgg 720  
 ggtggtgcag aaccgcacga agaacagtgc ctgagcgcac tcaccgttca cttctccggc 780  
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 aatcagatga acttaggagc caccttaaaag ggccacagca cagggtacga gagcgataac 1260  
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 ggcattcagg atgtgcgacg tgtgcctgga gtagcccccga ctcttgtagc gtcggcatct 1380  
 gagaccagtg agaaacgccc cttcatgtgt gcttaccagc gctgcaataa gagatatttt 1440  
 aagctgtccc acttacagat gcacagcagg aagcacactg gtgagaaaac ataccagtgt 1500  
 gacttcaagg actgtgaacg aaggtttttt cgttcagacc agctcaaaag acaccaaagg 1560  
 agacatacag gtgtgaaacc attccagtgt aaaacttgtc agcgaaagtt ctcccgggtc 1620  
 gaccacctga agaccacac caggactcat acaggtgaaa agcccttcag ctgtcgggtg 1680  
 ccaagttgtc agaaaaagtt tgcccgttca gatgaattag tccgccatca caacatgcat 1740  
 cagagaaaca tgaccaaact ccagctggcg ctttga 1776

<210> 330  
 <211> 771  
 <212> DNA  
 <213> Homo sapiens

<400> 330  
 atgcagcatc accaccatca ccacggctcc gacgttcgtg acctgaacgc actgctgccg 60  
 gcagttccgt ccctgggtgg tgggtggtgg tgcgcaactg cggttagcgg tgcagcacag 120  
 tgggctccgg ttctggactt cgcaccgccg ggtgcatccg catacgggtc cctgggtggt 180  
 ccggcacccg cgcgggcacc gccgcgcgcg ccgcgcgcgc cgcgcactc cttcatcaaa 240  
 caggaaccga gctgggggtg tgcagaaccg cacgaagaac agtgccctgag cgcattcacc 300  
 gttcacttct ccggccagtt cactggcaca gccggagcct gtcgctacgg gcccttcggg 360  
 cctcctccgc ccagccaggc gtcatccggc caggccagga tgtttcctaa cgcgcctac 420  
 ctgcccagct gcctcgagag ccagcccgtt attcgcaatc agggttacag cacggtcacc 480  
 ttcgacggga cgcacagcta cggtcacacg cctcgcacc atgcggcgca gttcccaaac 540  
 cactcattca agcatgagga tcccatgggc cagcagggct cgctgggtga gcagcagtag 600  
 tgggtgcgcg ccccggtcta tggctgccac acccccaccg acagctgcac cggcagccag 660  
 gctttgctgc tgaggacgcc ctacagcagt gacaatttat accaaatgac atcccagctt 720

gaatgcatga cctggaatca gatgaactta ggagccacct taaagggctg a

771

<210> 331

<211> 567

<212> DNA

<213> Homo sapiens

<400> 331

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atgcagcatc accaccatca ccaccacagc acagggtacg agagcgataa ccacacaacg 60
cccatcctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 120
gatgtgcgac gtgtgcctgg agtagccccg actcttgtac ggtcggcatc tgagaccagt 180
gagaaacgcc ccttcattgtg tgcttaccca ggctgcaata agagatattt taagctgtcc 240
cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 300
gactgtgaac gaagggtttt tcgttcagac cagctcaaaa gacaccaaag gagacataca 360
ggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 420
aagaccaca ccaggactca tacaggtgaa aagcccttca gctgtcgggtg gccaaagtgt 480
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 540
atgaccaaac tccagctggc gctttga 567

```

<210> 332

<211> 342

<212> PRT

<213> Homo sapiens

<400> 332

```

Met Gln His His His His His Met Ser Asp Lys Ile Ile His Leu
              5              10              15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
              20              25              30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
              35              40              45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
              50              55              60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
              65              70              75              80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
              85              90              95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
              100             105             110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
              115             120             125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
              130             135             140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
              145             150             155             160
Ser Arg His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile
              165             170             175
Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly
              180             185             190
Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg
              195             200             205

```

Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro  
 210 215 220  
 Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser  
 225 230 235 240  
 Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys  
 245 250 255  
 Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg  
 260 265 270  
 His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe  
 275 280 285  
 Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu  
 290 295 300  
 Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg  
 305 310 315 320  
 Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr  
 325 330 335  
 Lys Leu Gln Leu Ala Leu  
 340

<210> 333  
 <211> 410  
 <212> PRT  
 <213> Homo sapiens

<400> 333  
 Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu  
 5 10 15  
 Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile  
 20 25 30  
 Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala  
 35 40 45  
 Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val  
 50 55 60  
 Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly  
 65 70 75 80  
 Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala  
 85 90 95  
 Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu  
 100 105 110  
 Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His  
 115 120 125  
 His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly  
 130 135 140  
 Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Lys Ser  
 145 150 155 160  
 Ser Arg Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val  
 165 170 175  
 Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala  
 180 185 190  
 Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala  
 195 200 205  
 Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro

210		215		220
Pro Pro Pro Pro Pro	His Ser Phe Ile Lys	Gln Glu Pro Ser Trp Gly		
225	230	235	240	
Gly Ala Glu Pro His	Glu Glu Gln Cys Leu Ser	Ala Phe Thr Val His		
	245	250	255	
Phe Ser Gly Gln Phe	Thr Gly Thr Ala Gly	Ala Cys Arg Tyr Gly Pro		
	260	265	270	
Phe Gly Pro Pro Pro	Pro Ser Gln Ala Ser Ser	Gly Gln Ala Arg Met		
	275	280	285	
Phe Pro Asn Ala Pro	Tyr Leu Pro Ser Cys Leu	Glu Ser Gln Pro Ala		
	290	295	300	
Ile Arg Asn Gln Gly	Tyr Ser Thr Val Thr	Phe Asp Gly Thr Pro Ser		
305	310	315	320	
Tyr Gly His Thr Pro	Ser His His Ala Ala	Gln Phe Pro Asn His Ser		
	325	330	335	
Phe Lys His Glu Asp	Pro Met Gly Gln Gln	Gly Ser Leu Gly Glu Gln		
	340	345	350	
Gln Tyr Ser Val Pro	Pro Pro Val Tyr Gly	Cys His Thr Pro Thr Asp		
	355	360	365	
Ser Cys Thr Gly Ser	Gln Ala Leu Leu Leu	Arg Thr Pro Tyr Ser Ser		
	370	375	380	
Asp Asn Leu Tyr Gln	Met Thr Ser Gln Leu	Glu Cys Met Thr Trp Asn		
385	390	395	400	
Gln Met Asn Leu Gly	Ala Thr Leu Lys Gly			
	405	410		

<210> 334  
 <211> 591  
 <212> PRT  
 <213> Homo sapiens

<400> 334
Met Gln His His His His His His Met Ser Asp Lys Ile Ile His Leu
5 10 15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
20 25 30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
35 40 45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
50 55 60
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
65 70 75 80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
85 90 95
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
100 105 110
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
115 120 125
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
130 135 140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
145 150 155 160
Ser Arg Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala

				165					170					175	
Val	Pro	Ser	Leu	Gly	Gly	Gly	Gly	Cys	Ala	Leu	Pro	Val	Ser	Gly	
			180				185					190			
Ala	Ala	Gln	Trp	Ala	Pro	Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala	Ser
		195					200					205			
Ala	Tyr	Gly	Ser	Leu	Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro
	210					215					220				
Pro	Pro	Pro	Pro	Pro	Pro	His	Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp
225					230					235					240
Gly	Gly	Ala	Glu	Pro	His	Glu	Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val
			245						250					255	
His	Phe	Ser	Gly	Gln	Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly
			260					265					270		
Pro	Phe	Gly	Pro	Pro	Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg
		275					280					285			
Met	Phe	Pro	Asn	Ala	Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro
	290					295					300				
Ala	Ile	Arg	Asn	Gln	Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro
305					310					315					320
Ser	Tyr	Gly	His	Thr	Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His
			325						330					335	
Ser	Phe	Lys	His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu
			340					345					350		
Gln	Gln	Tyr	Ser	Val	Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr
		355					360					365			
Asp	Ser	Cys	Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser
	370					375					380				
Ser	Asp	Asn	Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp
385					390					395					400
Asn	Gln	Met	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr
			405						410					415	
Glu	Ser	Asp	Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg
			420					425					430		
Ile	His	Thr	His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val
		435					440					445			
Pro	Gly	Val	Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu
	450					455					460				
Lys	Arg	Pro	Phe	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe
465					470					475					480
Lys	Leu	Ser	His	Leu	Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys
			485						490					495	
Pro	Tyr	Gln	Cys	Asp	Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser
			500					505					510		
Asp	Gln	Leu	Lys	Arg	His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe
	515						520								

```
<210> 336
<211> 188
<212> PRT
<213> Homo sapiens
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```

<400> 336
Met Gln His His His His His His His Ser Thr Gly Tyr Glu Ser Asp
                    5                      10                      15
Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr
                20                      25                      30
His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val
            35                      40                      45

```

<213> Homo sapiens

Met	Gln	His	His	His	His	His	His	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp
				5					10					15	
Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr
			20					25					30		
His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val
		35					40					45			



Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro  
50 55 60  
Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser  
65 70 75 80  
His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln  
85 90 95  
Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu  
100 105 110  
Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys  
115 120 125  
Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
130 135 140  
Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys  
145 150 155 160  
Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met  
165 170 175  
His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu  
180 185

<210> 337  
<211> 324  
<212> DNA  
<213> Homo sapiens

<400> 337  
atgcagcatc accaccatca ccacgggttc gacgtgcggg acctgaacgc actgctgccg 60  
gcagttccat ccctgggtgg cgggtggaggc tgcgcactgc cggttagcgg tgcagcacag 120  
tgggctccag ttctggactt cgcaccgcct ggtgcatccg catacggttc cctgggtggg 180  
ccagcacctc cgcccgaac gccccaccg cctccaccgc ccccgcactc cttcatcaaa 240  
caggaacctg gctggggtgg tgcagaaccg cacgaagaac agtgcctgag cgcattctga 300  
gaattctgca gatattcatc acac 324

<210> 338  
<211> 462  
<212> DNA  
<213> Homo sapiens

<400> 338  
atgcagcatc accaccatca ccaccacgaa gaacagtgcc tgagcgcatt caccgttcac 60  
ttctccggcc agttcactgg cacagccgga gcctgtcgct acggggccctt cggtcctcct 120  
ccgcccagcc aggcgtcatc cggccaggcc aggatgtttc ctaacgcgcc ctacctgccc 180  
agctgcctcg agagccagcc cgctattcgc aatcagggtt acagcacggg caccttcgac 240  
gggacgcca gctacggtca caagccctcg caccatgcgg cgcagttccc caaccactca 300  
ttcaagcatg aggatcccat gggccagcag ggctcgctgg gtgagcagca gtactcgggtg 360  
ccgcccccg tctatggttg ccacaccccc accgacagct gcaccggcag ccaggctttg 420  
ctgctgagga cgccctacag cagtgcacat ttatactgat ga 462

<210> 339  
<211> 405  
<212> DNA  
<213> Homo sapiens

<400> 339  
atgcagcatc accaccatca ccaccaggct ttgctgctga ggacgcccta cagcagtgc 60

```

aatttataacc aaatgacatc ccagcttgaa tgcattgacct ggaatcagat gaacttagga 120
gccaccttaa agggccacag cacagggtac gagagcgata accacacaac gcccatcctc 180
tgccggagccc aatacagaat acacacgcac ggtgtcttca gaggcattca ggatgtgcga 240
cgtgtgcctg gagtagcccc gactcttgta cggtcggcat ctgagaccag tgagaaacgc 300
cccttcatgt gtgcttacct aggctgcaat aagagatatt ttaagctgtc ccacttacag 360
atgcacagca ggaagcacac tggtagaaaa ccataccagt gatga 405

```

```

<210> 340
<211> 339
<212> DNA
<213> Homo sapiens

```

```

<400> 340
atgcagcatc accaccatca ccaccacagc aggaagcaca ctggtgagaa accataccag 60
tgtgacttca aggactgtga acgaagggtt ttctgttcag accagctcaa aagacaccaa 120
aggagacata cagggtgtgaa accattccag tgtaaaactt gtcagcgaaa gttctcccg 180
tccgaccacc tgaagaccca caccaggact catacagggtg aaaagccctt cagctgtcgg 240
tggccaagtt gtcagaaaaa gtttgcccg gtcagatgaat tagtccgcca tcacaacatg 300
catcagagaa acatgaccaa actccagctg gcgctttga 339

```

```

<210> 341
<211> 1110
<212> DNA
<213> Homo sapiens

```

```

<400> 341
atgcagcatc accaccatca ccaccactcc ttcatcaaac aggaaccgag ctgggggtggt 60
gcagaaccgc acgaagaaca gtgcctgagc gcattcaccg ttactttctc cggccagttc 120
actggcacag ccggagcctg tcgtacggg cccttcggtc ctctccgcc cagccaggcg 180
tcattccggc aggccaggat gtttcctaac gcgccctacc tgcccagctg cctcgagagc 240
cagcccgcta ttgcgaatca gggttacagc acggtcacct tcgacgggac gccagctac 300
ggtcacacgc cctgcacca tgccggcgag ttccccaacc actcattcaa gcatgaggat 360
cccatgggcc agcagggtc gctgggtgag cagcagtact cggtgccgcc cccggtctat 420
ggctgccaca cccccaccga cagctgcacc ggcagccagg ctttgctgct gaggacgcc 480
tacagcagtg acaatttata ccaaatagaca tcccagcttg aatgcatgac ctggaatcag 540
atgaacttag gagccacctt aaagggccac agcacagggt acgagagcga taaccacaca 600
acgcccattc tctgcggagc ccaatacaga atacacacgc acggtgtctt cagaggcatt 660
caggatgtgc gacgtgtgcc tggagtagcc ccgactcttg tacggtcggc atctgagacc 720
agtgcagaaac gcccttcat gtgtgcttac ccaggctgca ataagagata ttttaagctg 780
tcccacttac agatgcacag caggaagcac actggtgaga aaccatacca gtgtgacttc 840
aaggactgtg aacgaagggt ttttcgttca gaccagctca aaagacacca aaggagacat 900
acagggtgtg aaccattcca gtgtaaaact tgtcagcgaa agttctccc gtccgaccac 960
ctgaagaccc acaccaggac tcatacagggt gaaaagccct tcagctgtcg gtggccaagt 1020
tgtcagaaaa agtttgcccg gtcagatgaa ttagtccgcc atcacaacat gcatcagaga 1080
aacatgacca aactccagct ggcgctttga

```

```

<210> 342
<211> 99
<212> PRT
<213> Homo sapiens

```

&lt;400&gt; 342

```

Met Gln His His His His His His Gly Ser Asp Val Arg Asp Leu Asn
                    5          10          15
Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Gly Cys Ala
          20          25          30
Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
          35          40          45
Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
          50          55          60
Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
          65          70          75          80
Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
          85          90          95
Ser Ala Phe

```

&lt;210&gt; 343

&lt;211&gt; 152

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 343

```

Met Gln His His His His His His His Glu Glu Gln Cys Leu Ser Ala
                    5          10          15
Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys
          20          25          30
Arg Tyr Gly Pro Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly
          35          40          45
Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu
          50          55          60
Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp
          65          70          75          80
Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe
          85          90          95
Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser
          100          105          110
Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His
          115          120          125
Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr
          130          135          140
Pro Tyr Ser Ser Asp Asn Leu Tyr
          145          150

```

&lt;210&gt; 344

&lt;211&gt; 133

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 344

```

Met Gln His His His His His His Gln Ala Leu Leu Leu Arg Thr Pro
                    5          10          15
Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
          20          25          30

```

```

Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
      35              40              45
Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
      50              55              60
Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
      65              70              75              80
Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
      85              90              95
Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
      100             105             110
Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
      115             120             125
Glu Lys Pro Tyr Gln
      130

```

```

<210> 345
<211> 112
<212> PRT
<213> Homo sapiens

```

```

<400> 345
Met Gln His His His His His His His Ser Arg Lys His Thr Gly Glu
              5              10              15
Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg
              20              25              30
Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro
      35              40              45
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
      50              55              60
Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg
      65              70              75              80
Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg
              85              90              95
His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
      100             105             110

```

```

<210> 346
<211> 369
<212> PRT
<213> Homo sapiens

```

```

<400> 346
Met Gln His His His His His His Ser Phe Ile Lys Gln Glu Pro
              5              10              15
Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe
      20              25              30
Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg
      35              40              45
Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln
      50              55              60
Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser
      65              70              75              80

```

Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly  
                     85                    90                    95  
 Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro  
                     100                    105                    110  
 Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu  
                     115                    120                    125  
 Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr  
                     130                    135                    140  
 Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro  
 145                    150                    155                    160  
 Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met  
                     165                    170                    175  
 Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr  
                     180                    185                    190  
 Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln  
                     195                    200                    205  
 Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg  
                     210                    215                    220  
 Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr  
 225                    230                    235                    240  
 Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg  
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 Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly  
                     260                    265                    270  
 Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe  
                     275                    280                    285  
 Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys  
 290                    295                    300  
 Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His  
 305                    310                    315                    320  
 Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys  
                     325                    330                    335  
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val  
                     340                    345                    350  
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala  
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21

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<223> Primer

<400> 353

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29

<210> 354

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

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<400> 376  
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<210> 377  
 <211> 1292  
 <212> DNA  
 <213> Homo sapiens

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&lt;400&gt; 377

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&lt;210&gt; 378

&lt;211&gt; 1291

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 378

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1291

<210> 379

<211> 1281

<212> DNA

<213> Homo sapiens

<400> 379

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<212> DNA

<213> Homo sapiens

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<210> 381

<211> 1291

<212> DNA

<213> Homo sapiens

<400> 381

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aaaccatacc agtgtgactt caaggactgt gaacgaagggt tttttcggtc agaccagctc 1140
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aagttctccc ggtccgacca cctgaagacc cacaccagga ctcatacagg tgaaaagccc 1260
ttcagctgtc ggtggccaag ttgtcagaaa aagtttgccc ggtcagatga attagtccgc 1320
catcacaaca tgcacagag aaacatgacc aaactccagc tggcgcttct taacaacatg 1380
ttgatcccca ttgtgtggg cgggtgccctg gcagggtgtg tctcatcgt cctcattgcc 1440
tacctcattg gcaggaagag gagtacgcgc ggctatcaga ccatctagtg a                                     1491

```

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<210> 383
<211> 1251
<212> DNA
<213> Homo sapiens

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```

<400> 383

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atggcgcccc gcagcgcccc gcgacccctg ctgctgctac tgcctgttgc tgctgctcgg 60
cctcatgcat tgtcgtcagc agccatgttt atggtgaaaa atggcaacgg gaccgctgctc 120
ataatggcca acttctctgc tgccttctca gtgaactacg acaccaagag tggccccaag 180
aacatgacct ttgacctgcc atcagatgcc acagtgggtgc tcaaccgcag ctctgtgga 240
aaagagaaca cttctgaccc cagtctcgtg attgcttttg gaagaggaca tacactcact 300
ctcaatttca cgagaaatgc aacacgttac agcgttcagc tcatgagttt tgtttataac 360
ttgtcagaca cacacctttt cccaatgcg agctccaaag aaatcaagac tgtggaatct 420
ataactgaca tcagggcaga tatagataaa aaatacagat gtgttagtgg caccaggtc 480
cacatgaaca acgtgaccgt aacgctccat gatgccacca tccaggcgta ctttccaac 540
agcagcttca gcaggggaga gacacgctgt gaacaagaca ggccttcccc aaccacagcg 600
ccccctgcgc caccagccc ctgcacctca cccgtgccca agagcccctc tgtggacaag 660
tacaacgtga gcggcaccaa cgggacctgc ctgctggcca gcatggggct gcagctgaac 720
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aagacctcgg ccagcgggag ctgcggcgcc cacttgggtga ctctggagct gcacagcgag 840
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caaggaatcc agttgaatac aattcttctt gacgccagag accctgcctt taaagctgcc 960
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<210> 384  
 <211> 228  
 <212> DNA  
 <213> Homo sapiens

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<400> 384
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gacaccatcg agaattgtcaa ggcaaagatc caagataagg aaggcattcc tctgatcag 120
cagaggttga tctttgcggg aaaacagctg gaagatggtc gtaccctgtc tgactacaac 180
atccagaaaag agtccacctt gcacctggta ctccgtctca gaggtggg 228

```

<210> 385  
 <211> 1515  
 <212> DNA  
 <213> Homo sapiens

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<400> 385
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cagaggctca tctttgcagg caagcagcta gaagatggcc gcactcttct tgactacaac 180
atccagaagg agtcgacctt gcacctgggt ctctgcctga gagtgccat gggctccgac 240
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gcactgccgg ttagcgggtg agcacagtgg gctccggttc tggacttcgc accgccgggt 360
gcatccgcat acggttccct gggtggtccg gcaccgccgc cggcaccgcc gccgccggcg 420
ccgccgccgc actccttcat caaacaggaa ccgagctggg gtggtgcaga accgcacgaa 480
gaacagtgcc tgagcgcatt caccgttcac ttctccggcc agttcactgg cacagccgga 540
gcctgtcgct acgggccctt cggctctcct ccgccagcc aggcgtcatc cggccaggcc 600
aggatgtttc ctaacgcgcc ctatctgccc agctgcctcg agagccagcc cgctattcgc 660
aatcaggggt acagcacggg cacccttcgac gggacgccca gctacgggtc cacgccctcg 720
caccatgcgg cgcagttccc caaccactca ttcaagcatg aggatcccat gggccagcag 780

```



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ggctcgtctgg gtgagcagca gtactcgggtg ccgcccccg tctatggctg ccacaccccc 840
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ttataccaaa tgacatccca gcttgaatgc atgacctgga atcagatgaa cttaggagcc 960
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ggagcccaat acagaatata cacgcacggg gtcttcagag gcattcagga tgtgcgacgt 1080
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ttccagtgtg aaacttgtca gcgaaagttc tcccggtccg accacctgaa gaccacacc 1380
aggactcata cagggtgaaaa gcccttcagc tgtcgggtggc caagttgtca gaaaaagttt 1440
gcccggtcag atgaattagt ccgccatcac aacatgcac agagaaacat gaccaaactc 1500
cagctggcgc tttga 1515

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<210> 386

<211> 648

<212> DNA

<213> Homo sapiens

<400> 386

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atgcactcct tcatcaaaca ggaaccgagc tgggggtggtg cagaaccgca cgaagaacag 60
tgctgagcg cattcaccgt tcaattctcc ggccagttca ctggcacagc cggagcctgt 120
cgctacgggc cttcgggtcc tctccgccc agccaggcgt catccggcca ggccaggatg 180
tttctaacg cgccctacct gccagctgc ctcgagagcc agcccgtat tcgcaatcag 240
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gcggcgagcgt tccccaaaca ctcatcgaag catgaggatc ccatgggcca gcagggtctg 360
ctgggtgagc agcagtactc ggtgcgccc ccggtctatg gctgccacac cccaccgac 420
agctgcaccg gcagccaggc tttgctgctg aggaagccct acagcagtga caatttatac 480
caaatgacat cccagcttga atgcatgacc tggaatcaga tgaacttagg agccacctta 540
aagggccaca gcacagggtg cgagagcgat aaccacacaa cgccatcct ctgcggagcc 600
caatacagaa tacacacgca cgggtgtctc agaggcattc agtgatga 648

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<210> 387

<211> 1089

<212> DNA

<213> Homo sapiens

<400> 387

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atgcactcct tcatcaaaca ggaaccgagc tgggggtggtg cagaaccgca cgaagaacag 60
tgctgagcg cattcaccgt tcaattctcc ggccagttca ctggcacagc cggagcctgt 120
cgctacgggc cttcgggtcc tctccgccc agccaggcgt catccggcca ggccaggatg 180
tttctaacg cgccctacct gccagctgc ctcgagagcc agcccgtat tcgcaatcag 240
ggttacagca cggtcacctt cgacgggacg cccagctacg gtcacacgcc ctgcacccat 300
gcggcgagcgt tccccaaaca ctcatcgaag catgaggatc ccatgggcca gcagggtctg 360
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agctgcaccg gcagccaggc tttgctgctg aggaagccct acagcagtga caatttatac 480
caaatgacat cccagcttga atgcatgacc tggaatcaga tgaacttagg agccacctta 540
aagggccaca gcacagggtg cgagagcgat aaccacacaa cgccatcct ctgcggagcc 600
caatacagaa tacacacgca cgggtgtctc agaggcattc aggatgtgag acgtgtgct 660
ggagtagccc cgactcttgt acggtcggca tctgagacca gtgagaaacg ccccttcatg 720
tgtgcttacc caggctgcaa taagagatat tttaagctgt cccacttaca gatgcacagc 780
aggaagcaca ctggtgagaa accataccag tgtgacttca aggactgtga acgaaggttt 840
tttcgttcag accagctcaa aagacaccaa aggagacata cagggtgtgaa accattccag 900

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tgtaaaactt gtcagcgaaa gttctccggg tccgaccacc tgaagaccca caccaggact 960
catacagggtg aaaagccctt cagctgtcgg tggccaagtt gtcagaaaaa gtttgcccgg 1020
tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaa actccagctg 1080
gcgctttga                                     1089

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<210> 388

<211> 1035

<212> DNA

<213> Homo sapiens

<400> 388

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atgacggccg cgtccgataa cttccagctg tcccaggggtg ggcagggatt cgccattccg 60
atcgggcagg cgatggcgat cgcgggcccag atcaagcttc ccaccgttca tatcgggcct 120
accgccttcc tcggcttggg tgttgtcgac aacaacggca acggcgcacg agtccaacgc 180
gtggtcggga gcgctccggc ggcaagtctc ggcatctcca ccggcgacgt gatcaccgcy 240
gtcgacggcg ctccgatcaa ctccggccacc gcgatggcgg acgcgcttaa cgggcatcat 300
cccgtgacg tcatctcggg gacctggcaa accaagtcgg gcggcacgcy tacagggaac 360
gtgacattgg ccgagggacc cccggccgaa ttccactcct tcatcaaaca ggaaccgagc 420
tggggtgggt cagaaccgca cgaagaacag tgctgagcg cattaccgt tcaattctcc 480
ggccagttca ctggcacagc cggagcctgt cgctacgggc ctttcgggtc tctccgccc 540
agccaggcgt catccggcca ggccaggatg ttctctaacg cgcctacct gccagctgc 600
ctcgagagcc agcccgtat tcgcaatcag gggtacagca cggtcacct cgacgggacg 660
cccagctacg gtcacacgcc ctgcacccat gcggcgacgt tccccacca ctattcaag 720
catgaggatc ccatgggcca gcagggtcgt ctgggtgagc agcagtactc ggtgcgcgcc 780
ccggtctatg gctgccacac cccaccgcag agctgcaccg gcagccaggc tttgctgctg 840
aggacgccct acagcagtga caatttatac caaatgacat ccagcttga atgcatgacc 900
tggaatcaga tgaacttagg agccacctta aagggccaca gcacagggta cgagagcgat 960
aaccacacaa cgcccatcct ctgcggagcc caatacagaa tacacacgca cgggtgtctc 1020
agaggcattc agtga                                     1035

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<210> 389

<211> 1263

<212> DNA

<213> Homo sapiens

<400> 389

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atgacggccg cgtccgataa cttccagctg tcccaggggtg ggcagggatt cgccattccg 60
atcgggcagg cgatggcgat cgcgggcccag atcaagcttc ccaccgttca tatcgggcct 120
accgccttcc tcggcttggg tgttgtcgac aacaacggca acggcgcacg agtccaacgc 180
gtggtcggga gcgctccggc ggcaagtctc ggcatctcca ccggcgacgt gatcaccgcy 240
gtcgacggcg ctccgatcaa ctccggccacc gcgatggcgg acgcgcttaa cgggcatcat 300
cccgtgacg tcatctcggg gacctggcaa accaagtcgg gcggcacgcy tacagggaac 360
gtgacattgg ccgagggacc cccggccgaa ttcccgtcgg tgccgcgcgg cagcccgatg 420
ggctccgacg ttccggacct gaacgcactg ctgccggcag ttccgtccct ggggtggtgt 480
gggtggttgc cactgccggg tagcgggtgca gcacagtggg ctccgggtct ggacttcgca 540
ccgccgggtg catccgcata cggttccctg ggtggtccgg caccgcgcgc ggcaccgcgc 600
ccgcgcgcgc cgcgcgcgcg gcaactcctc aaccagagct ggggtggtgca 660
gaaccgcacg aagaacagtg cctgagcgca ttaccgttc acttctccgg ccagttcact 720
ggcacagccg gagcctgtcg ctacgggccc ttccgtctc ctccgccag ccaggcgtca 780
tccggccagg ccaggatgtt tcttaacgcg ccctacctgc ccagctgcct cgagagccag 840
cccgtatttc gcaatcaggg ttacagcacg gtcaccttcg acgggacgcc cagctacggg 900
cacacgccct cgcaccatgc ggcgagttc cccaaccact cattcaagca tgaggatccc 960
atgggccagc agggctcgct ggggtgagcag cagtactcgg tgccgcccc ggtctatggc 1020
tgccacaccc ccaccgacag ctgcaccggc agccaggctt tgctgctgag gacgcctac 1080

```

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agcagtgaca atttatacca aatgacatcc cagcttgaat gcatgacctg gaatcagatg 1140
aacttaggag ccaccttaaa gggccacagc acaggggtacg agagcgataa ccacacaacg 1200
cccattctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 1260
tga 1263

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<210> 390

<211> 1707

<212> DNA

<213> Homo sapiens

<400> 390

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atcggggcagg cgatggcgat cgcgggccaag atcaagcttc ccaccgttca tatcgggcct 120
accgccttcc tcggcttggg tgttgtcgac aacaacggca acggcgcacg agtccaacgc 180
gtggtcggga gcgtccggc ggcaagtctc ggcatctcca ccggcgacgt gatcacgcg 240
gtcgacggcg ctccgatcaa ctccggccacc gcgatggcgg acgcgcttaa cgggcatcat 300
cccggtgacg tcattctcggg gacctggcaa accaagtcgg gcggcacgcg tacagggaac 360
gtgacattgg ccgagggacc ccgggccgaa ttcccgctgg tgccgcgcgg cagcccgatg 420
ggctccgacg ttccggacct gaacgcactg ctgccggcag ttccgtccct ggggtggtgg 480
gggtggttgc cactgccggg tagcgggtgca gcacagtggg ctccggttct ggacttcgca 540
ccgcggggtg catccgcata cggttccctg ggtggtccgg caccgccgcc ggcaccgccg 600
ccgcggccgc cgcgcgccgc gcactccttc atcaaacagg aaccgagctg ggggtggtgca 660
gaaccgcacg aagaacagtg cctgagcgca ttaccgctc acttctccgg ccagttcaact 720
ggcacagccg gagcctgtcg ctacgggcc ttccggtctc ctccgcccag ccaggcgctc 780
tcgggccagg ccaggatggt tcctaacgcg ccctacctgc ccagctgcct cgagagccag 840
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cacacgcctt cgcaccatgc ggcgagttc cccaaccact cattcaagca tgaggatccc 960
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tgccacaccc ccaccgacag ctgcaccggc agccaggctt tgctgctgag gacgcctac 1080
agcagtgaca atttatacca aatgacatcc cagcttgaat gcatgacctg gaatcagatg 1140
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cccattctct gcggagccca atacagaata cacacgcacg gtgtcttcag aggcattcag 1260
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gggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 1560
aagaccaca ccaggactca tacagggtgaa aagcccttca gctgtcgggt gccaaagtgt 1620
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 1680
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<210> 391

<211> 344

<212> PRT

<213> Homo sapiens

<400> 391

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Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
      5                      10                      15

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Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
      20                      25                      30

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Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val

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35	40	45
Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser		
50	55	60
Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala		
65	70	75 80
Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu		
	85	90 95
Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys		
	100	105 110
Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro		
	115	120 125
Ala Glu Phe His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala		
	130	135 140
Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser		
	145	150 155 160
Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly		
	165	170 175
Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro		
	180	185 190
Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg		
	195	200 205
Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly		
	210	215 220
His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys		
	225	230 235 240
His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr		
	245	250 255
Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys		
	260	265 270
Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn		
	275	280 285
Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met		
	290	295 300
Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp		
	305	310 315 320
Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr		

325

330

335

His Gly Val Phe Arg Gly Ile Gln  
340

&lt;210&gt; 392

&lt;211&gt; 568

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 392

Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly  
5 10 15

Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys  
20 25 30

Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val  
35 40 45

Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser  
50 55 60

Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala  
65 70 75 80

Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu  
85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys  
100 105 110

Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro  
115 120 125

Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val  
130 135 140

Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly  
145 150 155 160

Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val  
165 170 175

Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly  
180 185 190

Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His  
195 200 205

Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu  
210 215 220

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Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr  
 225 230 235 240  
 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro  
 245 250 255  
 Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr  
 260 265 270  
 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr  
 275 280 285  
 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser  
 290 295 300  
 His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro  
 305 310 315 320  
 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro  
 325 330 335  
 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln  
 340 345 350  
 Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met  
 355 360 365  
 Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala  
 370 375 380  
 Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr  
 385 390 395 400  
 Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe  
 405 410 415  
 Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu  
 420 425 430  
 Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala  
 435 440 445  
 Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met  
 450 455 460  
 His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys  
 465 470 475 480  
 Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln  
 485 490 495  
 Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
 500 505 510

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
 515 520 525  
 Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe  
 530 535 540  
 Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn  
 545 550 555 560  
 Met Thr Lys Leu Gln Leu Ala Leu  
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<210> 393  
 <211> 420  
 <212> PRT  
 <213> Homo sapiens

<400> 393  
 Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly  
 5 10 15  
 Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys  
 20 25 30  
 Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val  
 35 40 45  
 Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser  
 50 55 60  
 Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala  
 65 70 75 80  
 Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu  
 85 90 95  
 Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys  
 100 105 110  
 Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro  
 115 120 125  
 Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val  
 130 135 140  
 Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly  
 145 150 155 160  
 Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val  
 165 170 175  
 Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly  
 180 185 190

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Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His  
 195 200 205  
 Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu  
 210 215 220  
 Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr  
 225 230 235 240  
 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro  
 245 250 255  
 Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr  
 260 265 270  
 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr  
 275 280 285  
 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser  
 290 295 300  
 His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro  
 305 310 315 320  
 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro  
 325 330 335  
 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln  
 340 345 350  
 Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met  
 355 360 365  
 Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala  
 370 375 380  
 Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr  
 385 390 395 400  
 Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe  
 405 410 415  
 Arg Gly Ile Gln  
 420

&lt;210&gt; 394

&lt;211&gt; 362

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 394

Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro



				5				10				15			
His	Glu	Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln
20								25				30			
Phe	Thr	Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro
35								40				45			
Pro	Pro	Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala
50								55				60			
Pro	Tyr	Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	Arg	Asn	Gln
65								70				75			
Gly	Tyr	Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	Gly	His	Thr
				85								90			
Pro	Ser	His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	Lys	His	Glu
				100				105				110			
Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr	Ser	Val
				115				120				125			
Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys	Thr	Gly
130								135				140			
Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr
145				150								155			
Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu
				165				170				175			
Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	Asn	His
				180				185				190			
Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr	His	Gly
				195				200				205			
Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val	Ala	Pro
210								215				220			
Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro	Phe	Met
225				230								235			
Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser	His	Leu
				245				250				255			
Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Asp
				260				265				270			
Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser	Asp	Gln	Leu	Lys	Arg
275								280				285			
His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys

290

295

300

Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr  
 305 310 315 320

His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys  
 325 330 335

Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln  
 340 345 350

Arg Asn Met Thr Lys Leu Gln Leu Ala Leu  
 355 360

&lt;210&gt; 395

&lt;211&gt; 214

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 395

Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro  
 5 10 15

His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln  
 20 25 30

Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro  
 35 40 45

Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala  
 50 55 60

Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln  
 65 70 75 80

Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr  
 85 90 95

Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu  
 100 105 110

Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val  
 115 120 125

Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly  
 130 135 140

Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr  
 145 150 155 160

Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu  
 165 170 175

Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His  
 180 185 190

Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly  
 195 200 205

Val Phe Arg Gly Ile Gln  
 210

<210> 396

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 396

gacgaaagca tatgcactcc ttcacaaac

30

<210> 397

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 397

cgcgtgaatt catcactgaa tgcctctgaa g

31

<210> 398

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 398

cgataagcat atgacggccg cgtccgataa c

31

<210> 399

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 399

cgcgtgaatt catcactgaa tgcctctgaa g

31

<210> 400  
 <211> 31  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 400  
 cgataagcat atgacggccg cgtccgataa c 31

<210> 401  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 401  
 gtctgcagcg gccgctcaaa gcgccagc 28

<210> 402  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 402  
 gacgaaagca tatgcactcc ttcacaaac 30

<210> 403  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> PCR primer

<400> 403  
 gtctgcagcg gccgctcaaa gcgccagc 28

<210> 404  
 <211> 449  
 <212> PRT  
 <213> Homo sapiens

<400> 404  
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro  
 1 5 10 15

Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala  
 20 25 30  
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr  
 35 40 45  
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro  
 50 55 60  
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly  
 65 70 75 80  
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe  
 85 90 95  
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe  
 100 105 110  
 Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe  
 115 120 125  
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile  
 130 135 140  
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr  
 145 150 155 160  
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe  
 165 170 175  
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln  
 180 185 190  
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser  
 195 200 205  
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp  
 210 215 220  
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln  
 225 230 235 240  
 Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser  
 245 250 255  
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu  
 260 265 270  
 Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile  
 275 280 285  
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro  
 290 295 300  
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys  
 305 310 315 320  
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys  
 325 330 335  
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro  
 340 345 350  
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp  
 355 360 365  
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln  
 370 375 380  
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr  
 385 390 395 400  
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys  
 405 410 415  
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val  
 420 425 430  
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala  
 435 440 445

Leu

&lt;210&gt; 405

&lt;211&gt; 428

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 405

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Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1              5              10              15
Ser Pro Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Thr
      20              25              30
Gln Trp Ala Pro Val Leu Asp Phe Val Pro Pro Gly Ala Pro Val Cys
      35              40              45
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Leu Pro
      50              55              60
Pro Pro Pro Ser His Ser Phe Thr Lys Gln Glu Pro Ser Trp Gly Gly
65              70              75              80
Thr Glu Pro His Ala Gly Gln Gly Arg Ser Ala Leu Val Ala His Ser
      85              90              95
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
      100             105             110
Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
      115             120             125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
      130             135             140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145             150             155             160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Ser
      165             170             175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Pro Gly Glu Gln Gln
      180             185             190
Tyr Ser Ala Pro Pro Pro Val Cys Gly Cys Arg Thr Pro Thr Gly Ser
      195             200             205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Ala Pro Tyr Ser Gly Gly
      210             215             220
Asp Leu His Gln Thr Thr Ser Gln Leu Gly His Met Ala Trp Asn Gln
225             230             235             240
Thr Asn Leu Gly Ala Thr Leu Lys Gly His Gly Thr Gly Tyr Glu Ser
      245             250             255
Asp Asp His Thr Thr Pro Ile Leu Cys Gly Thr Gln Tyr Arg Ile Arg
      260             265             270
Ala Arg Gly Val Leu Arg Gly Thr Gln Asp Val Arg Cys Val Pro Gly
      275             280             285
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
      290             295             300
Pro Leu Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg His Phe Lys Pro
305             310             315             320
Ser Arg Leu Arg Val Arg Gly Arg Glu Arg Thr Gly Glu Lys Pro Tyr
      325             330             335
Gln Arg Asp Phe Lys Asp Arg Gly Arg Gly Leu Leu Arg Pro Asp Gln
      340             345             350

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Leu Lys Arg His Gln Arg Gly His Thr Gly Val Lys Pro Leu Gln Cys
    355                      360                      365
Glu Ala Arg Arg Arg Pro Pro Arg Pro Gly His Leu Lys Val His Thr
    370                      375                      380
Arg Thr His Thr Gly Gly Glu Pro Phe Ser Cys Arg Trp Pro Ser Cys
    385                      390                      395                      400
Gln Glu Lys Ser Ala Arg Pro Asp Glu Ser Ala Arg Arg His Asn Met
    405                      410                      415
His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
    420                      425

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<210> 406

<211> 414

<212> PRT

<213> Homo sapiens

<220>

<221> VARIANT

<222> 85, 86, 172, 173, 242, 245, 246, 247

<223> Xaa = Any Amino Acid

<400> 406

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Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Ala Val Pro
 1                      5                      10                      15
Ser Leu Gly Asp Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
    20                      25                      30
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala His
    35                      40                      45
Gly Pro Leu Gly Gly Pro Ala Pro Pro Ser Ala Pro Pro Pro Pro
    50                      55                      60
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Gly Pro Ser Trp Gly Gly
    65                      70                      75                      80
Ala Glu Leu His Xaa Xaa Gln Tyr Leu Ser Ala Phe Thr Val His Ser
    85                      90                      95
Ser Gly Gln Val His Trp His Gly Arg Gly Leu Ser Leu Arg Ala Pro
    100                      105                      110
Arg Pro Pro Ser Ala Gln Pro Gly Val Ile Arg Pro Gly Gln Asp Val
    115                      120                      125
Ser Arg Ala Leu Pro Ala Gln Pro Pro Arg Glu Pro Ala Arg Tyr Pro
    130                      135                      140
Gln Ser Gly Leu Gln His Gly His Leu Arg Arg Gly Val Arg Leu Arg
    145                      150                      155                      160
Ser His Ala Leu Ala Pro Cys Gly Ala Val Leu Xaa Xaa Thr Arg Ala
    165                      170                      175
Gly Ser His Gly Pro Ala Gly Ser Ala Gly Ala Ala Val Leu Gly Ala
    180                      185                      190
Ala Pro Gly Leu Trp Pro Pro His Pro Arg Arg Gln Leu Arg Arg Gln
    195                      200                      205
Pro Gly Phe Ala Ala Glu Gly Ala Leu Gln Arg Arg Phe Ile Pro Ser
    210                      215                      220
Asp Val Pro Ala Val His Gly Leu Glu Ser Asp Glu Pro Arg Gly Arg
    225                      230                      235                      240
Leu Xaa Gly Pro Xaa Xaa Xaa Val Arg Glu Arg Ser His Asn Ala Arg

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                245                250                255
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Gly
                260                265                270
Arg Ser Gly Cys Ala Pro Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
                275                280                285
Val Gly Ile Gly Gln Gly Thr Pro Pro His Val Cys Leu Pro Arg Leu
                290                295                300
Gln Glu Val Ser Glu Ala Ala Pro Leu Thr Asp Ala Arg Glu Ala Arg
305                310                315
Trp Glu Thr Ile Pro Val Leu Gln Gly Leu Trp Thr Glu Val Phe Leu
                325                330                335
Leu Arg Pro Ala Gln Lys Thr Pro Gly Glu Ala Tyr Arg Cys Glu Ala
                340                345                350
Ile Pro Ala Asp Leu Ser Ala Arg Val Leu Pro Ala Gln Pro Pro Glu
                355                360                365
Asp Pro Arg Gln Asp Ser Cys Arg Lys Ala Pro Gln Leu Ser Val Val
                370                375                380
Arg Leu Ser Glu Lys Ala Cys Pro Val Lys Val Gly Pro Pro Ser Arg
385                390                395
His Ala Ser Glu Gly His Asp Arg Thr Pro Ala Gly Ala Leu
                405                410

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<210> 407

<211> 417

<212> PRT

<213> Homo sapiens

<400> 407

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Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Thr Ala Pro
 1                5                10                15
Ser Leu Gly Gly Gly Gly Asp Cys Thr Leu Pro Val Ser Gly Thr Ala
                20                25                30
Gln Trp Ala Pro Val Pro Ala Ser Ala Pro Pro Gly Ala Ser Ala Tyr
                35                40                45
Asp Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
50                55                60
Pro Pro Pro Pro His Ser Cys Gly Glu Gln Gly Pro Ser Trp Gly Gly
65                70                75                80
Ala Glu Pro Arg Glu Gly Gln Cys Leu Ser Ala Pro Ala Val Arg Phe
                85                90                95
Ser Gly Arg Phe Thr Gly Thr Val Gly Ala Cys Arg Tyr Gly Pro Leu
100                105                110
Gly Pro Pro Pro Pro Ser Gln Ala Pro Ser Gly Gln Thr Arg Met Leu
115                120                125
Pro Ser Ala Pro Tyr Leu Ser Ser Cys Leu Arg Ser Arg Ser Ala Ile
130                135                140
Arg Ser Gln Gly Arg Ser Thr Ala Pro Ser Ala Gly Arg Pro Ala Met
145                150                155                160
Ala Pro Thr Leu Ala Pro Pro Ala Gln Ser His Tyr Ser Gln His Gly
                165                170                175
Val Leu His Gly Pro Ala Gly Leu Ala Gly Ala Ala Val Leu Gly Ala
180                185                190
Ala Pro Gly Leu Trp Leu Pro His Pro His Arg Gln Leu His Arg Gln

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195 200 205  
 Pro Gly Phe Ala Ala Glu Asp Ala Leu Gln Gln Gln Phe Ile Pro Asn  
 210 215 220  
 Asp Ile Pro Ala Met His Asp Leu Glu Ser Asp Glu Leu Arg Ser His  
 225 230 235 240  
 Leu Lys Gly Pro Gln His Arg Val Arg Glu Arg Pro His Asn Ala His  
 245 250 255  
 Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Arg  
 260 265 270  
 His Ser Gly Cys Ala Thr Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr  
 275 280 285  
 Val Ala Pro Glu Thr Ser Glu Asn Ala Pro Trp Cys Val Leu Pro Gly  
 290 295 300  
 Leu Gln Gly Val Phe Ala Val Pro Leu Thr Gly Ala Gln Gln Glu Ala  
 305 310 315 320  
 His Trp Asp Ala Thr Pro Val Arg Leu Gln Gly Pro Trp Thr Arg Ala  
 325 330 335  
 Ser Pro Phe Gly Thr Ser Pro Arg Asp Thr Lys Gly Asp Ile Gln Val  
 340 345 350  
 Arg Asn His Ser Ser Val Arg Leu Val Ser Glu Gly Ser Pro Gly Pro  
 355 360 365  
 Thr Thr Gly Pro Thr Pro Gly Pro Thr Arg Val Gly Ser Pro Ser Ala  
 370 375 380  
 Ala Gly Gly Gln Ala Ala Arg Glu Gly Ser Pro Ser Gln Thr Asn Ser  
 385 390 395 400  
 Val Ile Thr Thr Cys Ile Ser Glu Thr Leu Asn Ser Ser Trp Arg Phe  
 405 410 415  
 Glu

<210> 408  
 <211> 429  
 <212> PRT  
 <213> Homo sapiens

<400> 408  
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro  
 1 5 10 15  
 Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala  
 20 25 30  
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr  
 35 40 45  
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro  
 50 55 60  
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly  
 65 70 75 80  
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe  
 85 90 95  
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe  
 100 105 110  
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe  
 115 120 125  
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile

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      130              135              140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145              150              155              160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
      165              170              175
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
      180              185              190
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
      195              200              205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
      210              215              220
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
225              230              235              240
Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser
      245              250              255
Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His
      260              265              270
Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly
      275              280              285
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
      290              295              300
Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu
305              310              315              320
Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr
      325              330              335
Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln
      340              345              350
Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys
      355              360              365
Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His
      370              375              380
Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser
385              390              395              400
Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
      405              410              415
Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
      420              425

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<210> 409

<211> 495

<212> PRT

<213> Homo sapiens

<400> 409

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Met Ala Ala Pro Gly Ala Arg Arg Ser Leu Leu Leu Leu Leu Ala
 1              5              10              15
Gly Leu Ala His Gly Ala Ser Ala Leu Phe Glu Asp Leu Met Gly Ser
      20              25              30
Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly
      35              40              45
Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala
      50              55              60
Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu

```

65					70					75					80
Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	His
				85					90					95	
Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly	Ala	Glu	Pro	His	Glu
			100					105					110		
Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln	Phe	Thr
		115					120					125			
Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro	Pro	Pro
	130					135					140				
Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala	Pro	Tyr
145					150					155					160
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